UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to NMFS Tracking
No.: 2004/00694

August 27, 2004

Mr. Kyle D. Moore
Range Management Specialist
United States Department of Agriculture
Natural Resource Conservation Service
Okanogan Field Office
1251 Second Avenue S.
Okanogan, Washington 98840

Re: Endangered Species Act Interagency Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Salmon Creek Streambank Stabilization and Fish Habitat Improvement Project, Salmon Creek, Okanogan County, Washington (HUC 170200060304, Lower Salmon Creek)

Dear Mr. Moore:

The enclosed document contains a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7(a)(2) of the Endangered Species Act (ESA) on the effects of construction activities associated with the Salmon Creek Streambank Stabilization and Fish Habitat Improvements Project in Salmon Creek near the town of Okanogan, Washington. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of the Upper Columbia River (UCR) steelhead Evolutionarily Significant Unit (ESU). The Opinion also includes an incidental take statement with terms and conditions necessary to minimize the impact of taking that is reasonably likely to be caused by this action. Take from actions by the action agency and applicant, if any, that meet these terms and conditions will be exempt from the ESA take prohibition.

This document also includes the results of our consultation on the action's likely effects on essential fish habitats (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), and includes conservation recommendations to avoid, minimize, or otherwise offset potential adverse effects to EFH. Section 305(b)(4)(B) of the MSA requires Federal agencies to provide a detailed written response to NOAA Fisheries within 30-days after receiving these recommendations. If the response is inconsistent with the recommendations, the NRCS

must explain why the recommendations will not be followed, including the justification for any disagreements over the effects of the action and the recommendations.

If you have questions regarding this consultation, please contact Kale Gullett of our Eastern Washington Habitat Branch Office in Ellensburg, Washington at 509-962-8911 extension 222, or via electronic mail at Kale.Gullett@noaa.gov.

Sincerely,

for Michael R Crouse

D. Robert Lohn
Regional Administrator

Enclosure

Endangered Species Act - Section 7 Consultation

Biological Opinion

And

Magnuson-Stevens Fishery Conservation and Management Act

Essential Fish Habitat Consultation

SALMON CREEK STREAMBANK STABILIZATION AND FISH HABITAT IMPROVEMENT PROJECTS

Upper Columbia River Steelhead
Salmon Creek
USGS HUC 6 – 170200060304, Lower Salmon Creek.
Okanogan County, Washington

Action Agency:	Natural Resources Conservation Service
Consultation Conducted by:	NOAA's National Marine Fisheries Northwest Region Washington State Habitat Office
Date Issued:	August 27, 2004
Issued by:	for Michael R Course D. Robert Lohn Regional Administrator
NMFS Tracking No.:	2004/00694

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INTRODUCTION

This document, prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries), includes a biological opinion (Opinion) and incidental take statement in accordance with section 7(b) the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq*.), and implementing regulations at 50 CFR 402. The essential fish habitat (EFH) consultation was prepared in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 *et seq*.) and implementing regulations at 50 CFR 600. The administrative record for this consultation is on file at the Washington State Habitat Office in Lacey, Washington.

The analyses presented herein are based on NOAA Fisheries' review of a Natural Resources Conservation Service (NRCS) proposal to undertake bank stabilization activities along Salmon Creek, a tributary to the Okanogan River in Okanogan County, Washington. The proposed action will occur within the geographic boundary and habitat of the Upper Columbia River (UCR) steelhead (*Oncorhynchus mykiss*) Evolutionarily Significant Unit (ESU[1]), listed as endangered under the ESA. Additionally, the proposed Action Area is designated as EFH for chinook (*O. tshawytscha*) and coho (*O. kisutch*) salmon.

Background and Consultation History

NOAA Fisheries has worked with NRCS throughout the development of this project by attending a site visit and reviewing and commenting on a draft Biological Assessment (BA). The NRCS requested consultation on June 21, 2004, through submission of a BA that determined that the proposed action "may affect" but was "not likely to adversely affect (NLAA)" endangered UCR steelhead in the action area. NOAA Fisheries was unable to agree with the NLAA determination, and contacted NRCS personnel to discuss the need for formal consultation. The NRCS project personnel agreed, and worked with NOAA Fisheries to address minor BA deficiencies until adequate information to initiate formal consultation was received on July 14, 2004. The formal consultation process involved reviewing information contained in the project BA, its subsequent addenda, and correspondence and communication between the NRCS and NOAA Fisheries (phone calls and electronic mail (e-mail)). NOAA Fisheries reviewed the following information and engaged in the following steps to prepare this consultation:

1. January 28, 2004 site visit with NRCS personnel to view proposed project work sites and discuss bank stabilization, land management, and site revegetation options.

[1] 'ESU' means an anadromous salmon or steelhead population that is either listed or being considered for listing under the ESA, is substantially isolated reproductively from conspecific populations, and represents an important component of the evolutionary legacy of the species (Waples 1991). An ESU may include portions or combinations of populations more commonly defined as stocks within or across regions.

2. May, 2004 receipt and review of draft BA from NRCS; comments returned to NRCS early June, 2004.

3. June 21, 2004 receipt in Lacey, Washington of letter from NRCS requesting informal consultation on Salmon Creek bank stabilization project (NOAA Fisheries No. 2004/00694).

4. July 8, 2004 phone call with NRCS Project personnel; NOAA Fisheries advised formal consultation and requested additional information via e-mail.

5. July 14, 2004 receipt of e-mail from NRCS responding to requests for information from NOAA Fisheries; information requirements met for initiation of formal consultation.

Proposed Action

Proposed actions are defined in the NOAA Fisheries' consultation regulations (50 CFR 402.02) as "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." The MSA (16 U.S.C. 1855(b)(2)) defines a Federal action as "any action authorized, funded, or undertaken or proposed to be authorized, funded, or undertaken by a Federal agency." Because NRCS proposes to fund and construct a project that includes activities that may affect listed resources, it must consult under ESA section 7(a)(2) and MSA section 305(b)(2).

The NRCS proposes to undertake bank stabilization, rehabilitation, and revegetation activities at two sites located on private property along 450 linear feet of Salmon Creek between River Miles (RM) 8.8 and 9.8 (Lat. 48.4349 °N, Long. 119.6542 °W) near the town of Okanogan, Washington. The in-water elements of the proposed action include constructing six rock/large woody debris (LWD) barbs, three at each of the two properties. Additionally, vertical, actively eroding streambanks will be re-contoured to match slopes along adjacent, stable banks. All disturbed and/or newly constructed sites will be revegetated, and instream construction activities (regardless of the year in which they are undertaken) will begin on November 1 and be completed by December 15 of the same year. Further descriptions of each of these elements of the proposed action are presented below.

Rock/Large Wood Barbs

The NRCS proposes to address lateral channel migration at these two private property sites along Salmon Creek by constructing six rock/LWD barbs at key locations where unnaturally high rates of erosion presently occur. These barbs will act to turn flow away from vertical streambanks, help control bed scour, and promote a depositional environment along the bank of the river by creating a velocity shadow both upstream and downstream of each barb. Resultant depositional areas will foster and protect the growth of riparian vegetation which will, in turn, contribute to the structural integrity of streambanks targeted for re-contouring.

Project personnel will work beach seines down through each project site prior to in-water construction activities in an attempt to "herd" listed steelhead from the area. Block nets will

bracket the project reach, and containment structures consisting of straw bales and visqueen will be erected to isolate work areas from flowing water. Pumps will dewater instream work areas isolated by containment structures, and turbid waters will be discharged to adjacent upland sites lacking surface connection to Salmon Creek. During the dewatering process, any fish trapped behind containment structures will be captured with dip nets and released upstream of the work area, above the upstream block net. The NRCS will continue to inspect isolated work areas during the dewatering process, and remove all visible fish prior to commencing instream construction activities.

The NRCS will construct each rock/LWD barb with a mixture of large boulders and trees with attached rootwads after all visible fish have been removed from contained work areas. The six rock/LWD barb structures will require approximately 200 cubic yards of 4-foot minus boulders and twelve to fifteen 18-inch (minimum) diameter at breast height (dbh) trees with rootwads to complete. Trees will be oriented within each barb with rootwads facing upstream or buried in the bank with the rootwads resting in the active channel of Salmon Creek.

Generally, the construction sequence of each barb will proceed as follows. A thumbed excavator situated atop the streambank will dig shoreward from the edge of the creek to install the key of each rock/LWD barb. After the key is constructed, instream work will begin as large rock and logs are placed, progressively extending the barb toward the center of Salmon Creek. Minor instream excavation will occur to seat large rocks in the riverbed, but excavated bed materials will be replaced into the void spaces of each barb; thus no net removal of benthic habitat will occur. The NRCS will use a small amount of cable in each barb to bind LWD pieces to the rock assemblage. Each barb will extend into the channel about 15 feet, measure about 25 feet wide at the bank, and taper to approximately 4 feet at the waterward end. In total, all six rock/LWD barbs will cover roughly 500 square feet of riverbed. Immediately after construction, the keys of each barb will be planted with live, rooted willow stakes in an effort to provide better riparian habitat and improve structural integrity.

Bank Re-contouring and Revegetation

The NRCS will re-contour vertical, actively eroding streambanks at each of the two sites along Salmon Creek when construction of the six rock/LWD barbs is complete. Most re-contouring activities will take place behind worksite isolation structures erected to build rock/LWD barbs. Silt fencing will be erected along the toe of banks targeted for re-contouring that are outside of the barb work boundaries. A tracked excavator will lay back vertical banks to shallow slopes (*i.e.,* 1:2 or 50%) that mimic the morphology of adjacent, stable streambanks. An electric fence will be extended at one of the project sites to restrict livestock from trampling newly re-contoured streambanks along Salmon Creek. All areas disturbed by machine activity will be seeded and covered with straw or mulch equivalent to discourage erosion during the first winter. Project personnel will return to the site the following spring (*e.g.,* April and May) and plant a mixture of native woody and herbaceous plants (*e.g.,* willow and alder) along re-contoured banks and within and around rock/LWD barbs. Planting density will approach 500 stems/acre, and native grass seed will be used as necessary to ensure that disturbed areas are protected from erosion.

Conservation Measures

In addition to the construction methods and mitigation actions described in the previous paragraphs, the NRCS will implement the following conservation measures to minimize and avoid any potentially adverse effects of machine activity and instream construction activities in Salmon Creek:

1. All equipment will be free from leaking fuel, oil, hydraulic fluid, and other external petroleum based products.

2. Equipment refueling and repair activities will take place in previously disturbed areas at least 300 feet away from Salmon Creek.

3. Equipment operators will have a hazardous material spill kit at the project site at all times, and all onsite equipment will be subjected to daily maintenance checks.

4. Machinery will access the target location by using existing roadways, pathways, or other previously-disturbed corridors, to the maximum extent practicable.

5. Instream construction will be accomplished with equipment situated atop streambanks, and the excavator's thumbed bucket and support arm will be the only parts of the machine that enter Salmon Creek.

6. All disturbed areas will be covered with straw, straw mulch (or equivalent) and/or seeded with a mixture of native grasses that control erosion when construction activities are complete.

7. Trees used in rock/LWD barbs will be 18-inch dbh minimum native trees with attached rootwads collected from adjacent areas outside of the functional floodplain.

8. No portion of a rock/LWD barb will extend above bankfull elevation, as determined by appropriate physical site indicators (*i.e.,* breaks in channel/floodplain topography, changes in riparian vegetation, changes in channel/floodplain sediment composition, and/or absence of debris deposition), the measured stage of an appropriate signature flow (*i.e.,* maximum discharge with a 1.5 to 2.0 year recurrence interval on the annual series), or hydraulic models.

9. Rock/LWD barbs will be appropriately sized for the target location, will be wider at the key than the end (thalweg axis), and will gradually decrease in elevation from the key to the barb terminus.

10. Rocks used within a barb will consist of an assortment of clean, native, angular rock, properly-sized for the target location. Non-native rock from sources outside the Salmon Creek Basin will not be used.

11. All rocks used for barb construction will be individually placed by a thumbed excavator or similar piece of equipment; end-dumping will not occur.

12. Consecutive barbs along Salmon Creek will not be built in close enough proximity as to hinder the function of adjacent barbs.

13. Revegetated sites will be irrigated for a minimum of three years to increase survival.

14. All instream work will be completed between November 1 to December 15.

Action Area

"Action Area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area of the action (50 CFR 402.02 and 402.14(h)(2)). For the purposes of this consultation, the Action Area includes all aquatic habitat along Salmon Creek from RM 9.8 downstream to RM 7.8, or about one mile below the downstream-most bank stabilization activities.

The action area is used by all life stages of UCR steelhead, although flow regulation in the basin significantly limits access into prime habitats in the Salmon Creek Basin. Likewise, habitat in the action area is suitable for use by all life stages of spring chinook and coho salmon, but significant annual flow depletion below the Okanogan Irrigation District (OID) diversion dam at RM 4.3 makes it highly unlikely these fish will be present. However, the environmental effects of the proposed project may adversely affect EFH for coho and chinook if uncontrolled spills or managed storage releases permit streamflow and salmon over the OID dam.

ENDANGERED SPECIES ACT

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with U.S. Fish and Wildlife Service and NOAA Fisheries, as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their critical habitats. Section 7(b)(4) requires the provision of an incidental take statement specifying the impact of any incidental taking and specifying reasonable and prudent measures to minimize such impacts.

Biological Opinion

This Opinion presents NOAA Fisheries' review of the status of the ESU considered in this consultation, the environmental baseline for the action area, all the effects of the action as proposed, and cumulative effects. NOAA Fisheries analyzes these combined factors to conclude whether the proposed action is likely to appreciably reduce the likelihood of both the survival and recovery of the affected ESU, or is likely to destroy or adversely modify critical habitat (see 50 CFR 402.14(g)). If the action under consultation is likely to jeopardize an ESU, NOAA

Fisheries must identify any reasonable and prudent alternatives for the action that avoid jeopardy and meet other regulatory requirements (50 CFR 402.02).

Status of the Evolutionarily Significant Unit

This section defines range-wide biological requirements of the UCR steelhead ESU, and reviews the status of the ESU relative to those requirements. The present risk faced by the UCR steelhead ESU informs NOAA Fisheries' determination of whether additional risk will "appreciably reduce" the likelihood that an ESU will survive and recover in the wild. The greater the present risk, the more likely any additional risk resulting from the proposed action's effects on the population size, productivity (growth rate), distribution, or genetic diversity of the ESU will be an appreciable reduction (see, McElhany *et al.* 2000).

The UCR steelhead ESU, listed as endangered on August 18, 1997 (62 FR 43937), includes all naturally spawned populations of steelhead (and their progeny) in the mainstem Columbia River and its tributaries upstream from the Yakima River confluence to the tailrace of Chief Joseph Dam, excluding tributary reaches extending into Canada. Wells Hatchery steelhead stock are also currently part of the listed ESU, and critical habitat is not presently designated for UCR steelhead[2]. Numerous factors across the UCR ESU that led to its listing in 1997 continue to exert substantial influence on anadromous fish production. These factors include declines in abundance of naturally produced fish, heavy harvest pressures, significant habitat loss, losses associated with mainstem Columbia River hydropower projects, grazing, irrigation diversions, and pervasive hatchery impacts that affect the viability of steelhead populations (McClure *et al.* 2002; TRT 2003).

Life history characteristics for UCR steelhead are similar to those of other inland steelhead ESUs; however, smolt age is dominated by 2- and 3-year-olds and some of the oldest smolt ages for steelhead, up to 7 years, are reported from this ESU (Peven 1990). Based on limited data, steelhead from the Wenatchee and Entiat rivers return to freshwater after one year in salt water, whereas Methow (and presumably Okanogan) River steelhead primarily return after two years in salt water. Similar to other inland Columbia River basin steelhead ESUs, adults typically return to the Columbia River between May and October and are considered summer-run steelhead. Adults may remain in freshwater up to a year before spawning, and, unlike chinook salmon or sockeye salmon, a fraction of steelhead adults attempt to migrate back to the ocean. A small number of these fish, known as kelts, may survive their post-spawn emigration and return again to spawn in their natal stream.

NOAA Fisheries has initially identified three important spawning populations within this ESU (Wenatchee, Entiat, and Methow Rivers), but believes that the Okanogan River most likely supported a fourth independent group of spawners (TRT 2003; BRT 2003). Hatchery returns predominate estimated escapements in the Wenatchee (65%), Methow, and Okanogan River Basins (81%; BRT 2003), and likely play a large part in the number of steelhead reaching spawning grounds in the Entiat Basin. The current status of steelhead endemic to the Okanogan

[2] On April 30, 2002, the U.S. District Court for the District of Columbia approved a NOAA Fisheries consent decree withdrawing a February 2000 critical habitat designation for this and 18 other ESUs. Presently, NOAA Fisheries is reexamining critical habitat delineations for these ESUs, and will soon provide new designations.

Basin is unknown, but very low numbers of natural steelhead presently return to this system, and those seen in recent years may be offspring from hatchery returns (TRT 2003).

On April 4, 2002, NOAA Fisheries defined interim abundance recovery targets for each spawning population in this ESU (Lohn 2002). These targets are intended to represent the number and productivity of naturally produced spawners that may be needed for recovery, in the context of whatever take or mortality is occurring. They should not be considered in isolation, as they represent the numbers that, taken together, may be needed for the population to be self-sustaining in its natural ecosystem. For UCR steelhead, interim recovery levels are 2,500 spawners in the Wenatchee River, 500 spawners in the Entiat River, and 2,500 spawners in the Methow River (Lohn 2002). Interim recovery levels for the Okanogan River will be set by the Interior Columbia Basin Technical Recovery Team (TRT) following an ESU-wide review of recent data (Lohn 2002).

Although returns of both hatchery and naturally produced steelhead to the Upper Columbia River ESU have increased in recent years, natural production and thus interim recovery goals remain well below desired levels (BRT 2003). Long-term data specific to the Okanogan (and thus the action area) are not available, but recent analyses on the other major spawning populations in the UCR steelhead ESU likely provide insight into the performance of fish in this basin. For example, a 5-year geometric mean (1997-2001) of approximately 900 naturally produced steelhead returned to the Wenatchee and Entiat rivers (combined) compared to the interim abundance target of 3,000 fish. Although 900 fish is well below the interim recovery target, it represents an improvement over past returns and an upward trend of 3.4% per year. However, the average percentage of natural fish for the recent 5-year period dropped from 35% to 29%, compared to the previous status review. For the Methow population, the 5-year geometric mean of natural returns over Wells Dam was 358. Although 358 fish is well below the interim recovery target, it is also an improvement over the recent past and signifies an increasing trend of 5.9% per year. In addition, the estimated 2001 return (1,380 naturally produced spawners) was the highest single annual return in the 25-year data series. However, the average percentage of wild origin spawners dropped from 19% for the period prior to the 1998 status review to 9% for the 1997 to 2001 returns. Taken as a whole, these data indicate that although short-term increases in abundance have been observed in some basins of the ESU, long-term productivity problems related to the clear failure of natural UCR stocks to replace themselves will likely hinder the attainment of interim recovery goals in the foreseeable future.

Environmental Baseline

The "environmental baseline" includes the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR 402.02). For projects that are ongoing actions, the effects of future actions over which the Federal agency has discretionary involvement or control will be analyzed as "effects of the action."

NOAA Fisheries describes the environmental baseline in terms of the biological requirements (habitat features and processes) necessary to support life stages of the subject ESU within the action area. When the environmental baseline departs from those biological requirements, the adverse effects of a proposed action on the ESU or its habitat are more likely to jeopardize the listed species or result in destruction or adverse modification of critical habitat (NMFS 1999).

The biological requirements of salmon and steelhead in the action area vary depending on the life history stage present and the natural range of variation present within that system (Groot and Margolis 1991; NRCC 1996; Spence *et al.* 1996). Generally, during spawning migrations, adult salmon require clean water with cool temperatures and access to thermal refugia, dissolved oxygen near 100% saturation, low turbidity, adequate flows and depths to allow passage over barriers to reach spawning sites, and sufficient holding and resting sites. Anadromous fish select spawning areas based on species-specific requirements of flow, water quality, substrate size, and groundwater upwelling. Embryo survival and fry emergence depend on substrate conditions (*e.g.,* gravel size, porosity, permeability, and oxygen concentrations), substrate stability during high flows, and, for most species, water temperatures of 13 ºC or less. Habitat requirements for juvenile rearing include seasonally suitable microhabitats for holding, feeding, and resting. Migration of juveniles to rearing areas, whether the ocean, lakes, or other stream reaches, requires unobstructed access to these habitats. Physical, chemical, and thermal conditions may all impede migrations of adult or juvenile fish. The biological requirements likely to be affected by this action are substrate quality, water quality, food, and unimpeded migratory access.

Each ESU considered in this Opinion resides in or migrates through the action area. Thus, for this action area, the biological requirements for salmon and steelhead are the habitat characteristics that would support successful migration, spawning, incubation, and rearing conditions for all life stages of UCR steelhead.

Salmon Creek is a perennial tributary of the Okanogan River with a total watershed area of about 167 square miles. Relatively high mountains surround the Salmon Creek Basin; maximum elevations exceed 8,200 feet. Vegetation in the watershed is mostly ponderosa pines interspersed with a bunchgrass and sparse deciduous shrub understory, although Douglas fir forests are found at the highest elevations in the basin. Primary land uses in the Salmon Creek valley include transportation, mineral exploration, irrigation, domestic use, livestock, and recreation (OSSS 2001). Within the action area, primary land uses include home sites, livestock operations, hay and grain fields, and pastureland.

Mainstem Salmon Creek is approximately 42.4 miles long, although access into the watershed for anadromous fish is restricted to the lower 15 miles by Conconully Dam, built in 1910 by the Bureau of Reclamation to provide water to the OID. Water for the OID is stored in Conconully Reservoir, which inundated a meadow that collected runoff from the North, West, and South Forks of Salmon Creek. Additionally, irrigation water is stored higher in the drainage at Conconully Lake, a natural lake in which additional storage was developed by the construction of Salmon Lake Dam (1921) and a feeder canal diverting water from Salmon Creek. The OID makes diversions of water released from Conconully Reservoir and Lake through the Salmon Creek Diversion Dam, located at RM 4.3. Stored water is released from April to October, and virtually all of this water is diverted into the OID delivery system at RM 4.3. Consequently the

lower 4.3 miles of Salmon Creek have been annually dewatered throughout the spring and summer, except during snowmelt events that result in uncontrolled spills at the OID diversion dam. Winter refill operations at Salmon Lake and Conconully Dam significantly decrease instream flows in the lower 15 miles of Salmon Creek, likely prohibiting upstream steelhead migration. Water quality in Salmon Creek between Conconully Dam and the OID diversion is generally good, although the lower 4.3 miles of Salmon Creek are 303(d) listed as instream flow impaired (WDOE 1998).

The passage barrier created along the lower 4.3 miles of Salmon Creek by upstream flow regulation practices has significantly diminished the fishery resources of the watershed. Spring chinook are thought to be extinct, and steelhead only ascend the OID diversion when high water years result in spills over the dam. However, the Colville Tribe, with the assistance of the Washington Water Trust and others, used Bonneville Power Administration funds to lease a block of water for release from Conconully Reservoir during the spring of 2003. Providing spring spills over the OID diversion resulted in a number of steelhead adults and redds above the dam (Chris Fisher, Confederated Colville Tribes, personal communication, July 7, 2004). Thus, UCR steelhead are likely rearing in the action area.

System-wide and localized sediment transport imbalances, coupled with floodplain development, significant flow regulation, and land management practices within the watershed, have destabilized numerous reaches of Salmon Creek. Although a natural phenomenon, lateral channel shifts can endanger capital structures or infrastructure and often precipitate ill-advised and/or inappropriate anthropogenic responses (*e.g.,* rip-rap) intended to stem unwanted channel migration. Aquatic habitat in the action area is degraded by flow regulation and sediment transport imbalances attributable to the construction and operation of Conconully Dam. Although Salmon Creek is relative steep (gradient about 1.8%) between Conconully Dam and its confluence with the Okanogan River, fluctuating releases of clear, erosive water from the dam have likely accelerated incision processes over those expected in a stream of this size and geology. Further, floodplain development (*e.g.,* channel relocations, homesite developments, riparian conversion to pasture and hay/grain fields, etc.) and the construction and maintenance of transportation corridors have diminished the functional quality and extent of instream and floodplain habitats integral to the survival and recovery of UCR steelhead. Consequently, Salmon Creek through the action area is largely a simplified channel composed of large substrates which lacks significant lateral habitat complexity; pools and spawning gravels persist only sporadically (OSSS 2001). Numerous reaches of Salmon Creek in the action area exhibit vertical, actively eroding banks that annually contribute tons of fine sediment to the system.

Overall, key environmental attributes that support UCR steelhead and their habitats in the Salmon Creek watershed and action area are degraded, especially when compared to properly functioning ecological conditions (see, NMFS 1996; 1999). Thus, the environmental baseline for the action area is degraded because ecological factors related to the flow regime, water quality, and habitat structure and function of Salmon Creek are not fully functional. These factors, in turn, alter the behavior of UCR steelhead and largely decrease the likelihood of successful reproduction and survival in the wild.

Effects of the Action

"Effects of the action" means the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02). If the proposed action includes offsite measures to reduce net adverse impacts by improving habitat conditions and survival, NOAA Fisheries will evaluate the net combined effects of the proposed action and the offsite measures as interrelated actions.

"Direct effects" are the immediate effects of the project on the listed species or its habitat. "Indirect effects" are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50 CFR 402.02). Indirect effects may occur outside the area directly affected by the action, and may include other Federal actions that have not undergone section 7 consultation but will result from the action under consideration.

"Interrelated actions" are those that are part of a larger action and depend on the larger action for their justification; "interdependent actions" are those that have no independent utility apart from the action under consideration (50 CFR 402.02). Future Federal actions that are not a direct effect of the action under consideration, and not included in the environmental baseline or treated as indirect effects, are not considered in this Opinion.

Effects on Listed Species and Their Habitat

Construction activities utilizing large machinery provide the greatest potential for direct effects that could kill or harm UCR steelhead and their habitat in Salmon Creek. These effects are a direct result of in-water work (*e.g.,* worksite isolation and dewatering and barb construction), and the potential for fuel and/or lubricant spills that increase the likelihood of exposing juvenile steelhead to petroleum-based materials. Worksite isolation and dewatering activities, in conjunction with fish capture and relocation (if necessary), could result in injury or death to juvenile steelhead. A consequence of barb construction is the excavation and/or displacement of bed materials that presently provide rearing habitat and food (benthic macroinvertebrates) for juvenile UCR steelhead.

Possible indirect effects of the proposed action include behavioral changes in UCR steelhead resulting from increased stream turbidity generated during in-water work, and possible long-term improvement in aquatic habitat at the site resulting from streambank stabilization and revegetation efforts. NOAA Fisheries did not identify any interrelated or interdependent actions or effects from the proposed project.

In-water Work

In-water work will be undertaken between November 1 and December 15, a time of the year when streamflows are usually quite low in Salmon Creek and only free-swimming steelhead are present. A few juvenile UCR steelhead are expected to be in the action area when project activities commence. However, NOAA Fisheries anticipates that fish herding, incremental

worksite dewatering and isolation structures, and fish removal actions will significantly decrease the potential for juvenile UCR steelhead to be within the dewatered areas.

Low streamflows in Salmon Creek during the work window will help ensure that effective worksite isolation structures can be built with minimal bed and bank disturbance. Additionally, habitat quality at each of the two worksites is poor, and the simplified nature of the stream channel in Salmon Creek affords few refuge sites for fish to remain once NRCS personnel begin fish herding activities. Although a few fish may fail to vacate worksites during herding efforts, NOAA Fisheries expects that any juvenile steelhead trapped behind worksite isolation structures can easily be captured with dip-nets and immediately transported upstream, out of the work site. Further, construction within dewatered, isolated areas will not commence until project personnel have ensured that all visible fish are removed and relocated.

As discussed above, the likelihood of mechanically injuring juvenile steelhead by in-water machinery activity is very small. However, worksite isolation and instream construction activities during the placement of rock/LWD structures will disturb the bed and banks of Salmon Creek to a moderate degree. The most significant effect of in-water work will be the temporary alteration (excavation and/or displacement) of approximately 500 square feet of substrate that presently provides rearing habitat and food (invertebrates) for juvenile UCR steelhead. However, the spatial and temporal extent of this temporary loss of food and displacement of rearing habitat is not expected to have a significant impact to UCR steelhead in the action area.

Invertebrates (*e.g.*, larval insects, obligate aquatic insects, molluscs, crustaceans etc.) recolonize disturbed areas by drifting, crawling, swimming, or flying in from adjacent areas (Mackay 1992). The time required for new invertebrates to reach pre-disturbance abundance levels and equilibrium would be related to the spatial scale of their initial habitat loss, the persistence of the excluding or disturbing mechanism, the size of adjacent or remnant invertebrate populations (potential colonizers), the season in which the disturbance is taking place, and the life history characteristics of the invertebrate species (Mackay 1992).

Lost foraging opportunities resulting from the disturbance of Salmon Creek bedforms will likely be short-lived as invertebrates will eventually recolonize the disturbed substrate (Allan 1995). NOAA Fisheries does not anticipate long-term impacts to prey abundance and habitat because 1) limited streambed excavation is required, and 2) following construction, new riverbed and bank materials will resemble or improve upon pre-disturbance habitat (*i.e.*, benthic habitat will not be permanently displaced). Further, the collection of rock/LWD barbs should provide better fish habitat than presently exists along the affected reach by creating velocity refugia for adult and juvenile salmonids, as well as improving the lateral habitat diversity of the immediate area. In comparison to standard bank protection techniques (*i.e.*, tail-dumping large, angular rock rip-rap) the installation of rock barbs is a more progressive methodology that promotes natural channel dynamics, provides better fish habitat, and encourages bank accretion and the establishment of riparian vegetation.

Turbidity

The proposed action will likely result in two distinct pulses of turbid water into Salmon Creek at each of the two project areas. Worksite isolation activities (*i.e.,* constructing sediment containment structures and silt fencing) will disturb streambed sediment and likely result in an increase in stream turbidity above background levels. The NRCS will complete all in-channel and streambank construction activities at each of the two project sites in areas isolated from the flowing waters of Salmon Creek. Thus, actions most likely to contribute to chronic fine sediment and turbidity in the action area throughout the construction period will be minimized by construction practices and logistics. The removal of sediment containment structures and reintroduction of flowing water into newly constructed rock/LWD barbs will again contribute to temporary turbidity increases in Salmon Creek.

For salmonids, turbidity has been linked to a number of behavioral and physiological responses (*i.e.,* gill flaring, coughing, avoidance, increase in blood sugar levels) which indicate some level of stress (Bisson and Bilby 1982; Sigler *et al.* 1984; Berg and Northcote 1985; Servizi and Martens 1992). The magnitude of these stress responses is generally higher when turbidity is increased and particle size decreased (Bisson and Bilby 1982; Servizi and Martens 1987; Gregory and Northcote 1993). Although turbidity may cause stress, Gregory and Northcote (1993) have shown that moderate levels of turbidity accelerate foraging rates among juvenile chinook salmon, likely because of reduced vulnerability to predators (camouflaging effect).

When the particles causing turbidity settle out of the water column, they contribute to sediment on the riverbed (sedimentation). When sedimentation occurs, salmonids may be negatively affected:
(1) buried salmonid eggs may be smothered and suffocated, (2) prey habitat may be displaced, and
(3) future spawning habitat may be displaced (Spence *et al.* 1996). Additionally, turbidity and subsequent sedimentation can affect the quality of stream substratum as spawning material, influence the exchange of streamflow and shallow alluvial groundwater, occupy channel storage areas for cobbles and gravels, increase width-depth ratios, depress riverine productivity, and contribute to decreased salmonid growth rates (Waters 1995; Newcombe and Jensen 1996; Shaw and Richardson 2001).

As described above, in-water work areas will be isolated and de-watered before rock/LWD barb construction begins. Although the installation and removal of worksite isolation devices may disturb bank and bed materials, sediment control measures are expected to minimize transport of sediment and resultant turbidity increases in Salmon Creek throughout the action area and downstream. Therefore, NOAA Fisheries believes that the proposed action will cause only minor, short-term increases in stream turbidity in Salmon Creek at each of the two project sites, and for short distances downstream. Consequently, the duration, magnitude, and extent of turbidity and fine sediment mobilization from the proposed action is expected to result in transient and minor changes in UCR steelhead habitat and behavioral patterns.

Potential Fuel and Lubricant Spills

As with all construction activities, accidental release of fuel, oil, and other contaminants may occur. Operation of heavy equipment requires the use of fuels and lubricants which, if spilled in the stream channel or riparian area can injure or kill aquatic organisms. Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain poly-cyclic aromatic hydrocarbons (PAHs) which can be acutely toxic to salmonids at high levels of exposure and can also cause chronic lethal and acute and chronic sublethal effects to aquatic organisms (Neff 1985).

The potential for pollutants to enter the stream will be minimized by staging fuels and equipment in approved areas, by having a spill-control plan, and by having spill-control materials on site. Further, the NRCS will complete all construction activities from atop the streambank, and only the bucket and a small portion of the support arm of a tracked excavator will penetrate the flowing waters of Salmon Creek. Thus, NOAA Fisheries believes that the risk of potential harmful effects from spilling petroleum-based fuels and lubricants will be reduced by the construction logistics employed by the NRCS.

Project Benefits

The proposed action is expected to have some beneficial effects to riparian and aquatic habitat along Salmon Creek in the action area. These benefits include: (1) restricting livestock access to the fragile banks of Salmon Creek by erecting an electric fence and developing off-site watering facilities; (2) re-contouring and revegetating vertical eroding banks along the creek, thus reducing fine sediment delivery and encouraging natural mechanisms and means of bank stabilization; (3) establishing riparian vegetation at each of the two project sites that will likely provide increased stream shading, streambank stability, and organic matter to Salmon Creek; (4) adding large woody material (logs with rootwads), a habitat element presently lacking along the action area and Salmon Creek; and (5) increasing the vertical and lateral habitat heterogeneity of the action area through the addition of rock/LWD barbs, riparian vegetation, and bank re-contouring activities.

Population Level Effects

As discussed in the Environmental Baseline section, a major factor in the Salmon Creek watershed that limits the population size, growth rate, distribution, and genetic diversity of UCR steelhead is significant, pervasive flow regulation practices that do not provide satisfactory passage conditions into and out of the drainage basin. The action under consultation will have no effect on this major problem. However, should flow regulation approaches change in the future, the proposed action will help provide better, more heterogeneous habitat conditions in areas accessible to anadromous salmonids.

An incremental change in the likelihood of survival and recovery for the ESU considered in this consultation due to the proposed action cannot be quantified. However, based on the direct and indirect effects described above, it is reasonably likely that the proposed action will have a small, local, short-term positive effect on the survival and recovery of the UCR steelhead ESU.

Cumulative Effects

"Cumulative effects" are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02). Cumulative effects that reduce the capacity of listed ESUs to meet their biological requirements in the action area increase the risk to the ESU that the effects of the proposed action on the ESU or its habitat will result in jeopardy (NMFS 1999).

Between 1990 and 2000, the population of Okanogan County, Washington increased by 18.6%[3]. Thus, NOAA Fisheries assumes that future private and state actions will continue within the action area, increasing as population density rises. As the human population in the action area continues to grow, demand for agricultural, commercial, or residential development is also likely to grow. The effects of new development caused by that demand are likely to further reduce the conservation value of habitat within the action area.

Quantifying an incremental change in survival for the UCR steelhead ESU due to cumulative effects in the action area is not possible given information available at this time. However, it is reasonably likely that those effects within the action area will have a small, long-term negative effect on the likelihood of the survival and recovery of UCR steelhead.

Conclusion

After reviewing the best available scientific and commercial information regarding the biological requirements and the status of the UCR steelhead ESU considered in this Opinion, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, NOAA Fisheries concludes that the action, as proposed, is not likely to jeopardize the continued existence of this species.

This conclusion is based on the following considerations: (1) All in-water work will be completed between November 1 and December 15 when streamflow in Salmon Creek is low and adult steelhead and redds will not be present; (2) displaced rearing habitat and food production areas will be replaced with native materials that will likely improve overall habitat quality over time; (3) isolation of the in-water work area is expected to minimize sediment transport downstream and thus minimize turbidity increases and latent sedimentation in the action area; (4) any turbidity increases which do occur are expected to be of short duration; (5) few juvenile UCR steelhead are expected to be rearing in the project area because of significant passage challenges downstream of the action area that limit spawning success and degraded instream habitat quality; (6) reduced fine sediment input, improved stream shading, and increased habitat complexity from the construction of rock/LWD barbs and revegetation efforts are expected to result in improved aquatic habitat condition over time; and, (7) the proposed action is not likely to impair properly functioning habitat, or retard the long-term progress of impaired habitat toward a functional condition essential to the long-term survival and recovery of UCR steelhead at the population or ESU scale.

[3] U.S. Census Bureau, State and County Quickfacts, Okanogan County, WA. Available at http://quickfacts.census.gov/qfd/states/41/41051.htmlhttp://quickfacts.census.gov/qfd/

Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. The following recommendations are discretionary measures that NOAA Fisheries believes are consistent with this obligation and therefore should be carried out by the NRCS:

- NOAA Fisheries recommends increasing riparian planting in the upstream and downstream vicinity of the project to promote bank stability and encourage additional lateral habitat heterogeneity.

- NOAA Fisheries recommends placing LWD along the banks of Salmon Creek to provide additional rearing habitat and possibly increase densities of juvenile MCR steelhead.

- NOAA Fisheries recommends building fences and providing off-site watering opportunities to exclude livestock from fragile streambanks along Salmon Creek.

Reinitiation of Consultation

Reinitiation of formal consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (1) If the amount or extent of taking specified in the incidental take statement is exceeded; (2) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) If the identified action is subsequently modified in a manner that has an effect to the listed species or critical habitat that was not considered in the biological opinion; or (4) If a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16).

To reinitiate consultation, contact the Washington State Habitat Office of NOAA Fisheries and refer to the NMFS Tracking Number assigned to this consultation (2004/00694).

Incidental Take Statement

Section 9(a)(1) of the ESA prohibits the taking of listed species without a specific permit or exemption. Protective regulations adopted pursuant to section 4(d) extends the prohibition to threatened species. Among other things, an action that injures or kills an individual of a listed species or harms a species by altering habitat in a way that significantly impairs its essential behavioral patterns is a taking (50 CFR 222.102). Incidental take refers to takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(o)(2) exempts any taking that meets the terms and conditions of a written incidental take statement from the taking prohibition.

Amount or Extent of Take

Individuals of the ESU considered in this consultation are likely to be present in the action area during part of the year when at least some effects of the proposed action will occur. Because these effects will injure or kill, incidental take is reasonably certain to occur. The relationship between habitat conditions and the distribution and abundance of those individuals in the action area is too imprecise to enable an estimate of a specific number of individuals. In such circumstances, NOAA Fisheries uses the causal link established between the activity and the extent of modified habitat to describe the extent of take as an extent of habitat disturbance.

Worksite isolation and construction activities associated with building six rock/LWD barbs are likely to injure UCR steelhead. The most likely mechanism of incidental take is the disturbance and displacement of substrate presently providing food (benthic macroinvertebrates) and rearing habitat for juvenile UCR steelhead in Salmon Creek. The extent of this modification is approximately
500 square feet of habitat. The extent of take is the number of fish that would have used this 500 square feet of habitat for feeding and rearing. Additionally, construction activities are likely to cause a single, short-term increase in stream turbidity. The downstream extent of increased turbidity causing changed behavior in salmonids is 100 feet from the sediment source. The extent of take anticipated is the number of fish that will temporarily avoid that 100 feet of stream.

Reasonable and Prudent Measures

Reasonable and prudent measures are non-discretionary measures to avoid or minimize take that must be carried out by cooperators for the exemption in section 7(o)(2) to apply. The NRCS has the continuing duty to regulate the activities covered in this incidental take statement where discretionary Federal involvement or control over the action has been retained or is authorized by law. The protective coverage of section 7(o)(2) may lapse if the NRCS fails to exercise its discretion to require adherence to terms and conditions of the incidental take statement, or to exercise that discretion as necessary to retain the oversight to ensure compliance with these terms and conditions. Similarly, if any applicant fails to act in accordance with the terms and conditions of the incidental take statement, protective coverage may lapse. The following reasonable and prudent measures are necessary and appropriate to minimize the impact on listed species of incidental taking caused by take of listed species resulting from completion of the proposed action.

The NRCS shall:

1. Minimize incidental take from construction by limiting the timing, location, and type of activities that adversely affect riparian and aquatic systems.

2. Ensure completion of a monitoring and reporting program to confirm this Opinion is meeting its objective of limiting the extent of take and minimizing take from permitted activities.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the NRCS and its cooperators, including the applicant(s), if any, must comply with the following terms and conditions that implement the reasonable and prudent measures described above. Partial compliance with these terms and conditions may invalidate this take exemption, result in more take than anticipated, and lead NOAA Fisheries to a different conclusion regarding whether the proposed action will result in jeopardy or the destruction or adverse modification of critical habitats.

1. To implement Reasonable and Prudent Measure No. 1, the NRCS shall ensure that:

   a. Timing of In-water Work. To limit project work during the time of the year most appropriate for the project location to minimize adverse effects to ESA-listed fish by conducting work when ESA-listed fish are less likely to be present or where spawning is not eminent, actively occurring, or recently completed.

      i. Complete work below bankfull elevation between November 1 and December 15 of the same year, unless otherwise approved in writing by NOAA Fisheries.

   b. Pollution and Erosion Control Plan (PECP). The NRCS shall develop a PECP that includes methods and measures to minimize erosion and sedimentation associated with the project. The PECP elements shall be in place before and at all times during the appropriate construction phases. The elements of water quality; spill prevention control and containment; site preparation; heavy equipment usage; earth moving; dewatering; flow reintroduction; and site restoration should be included in the PECP.

   c. Spill Prevention Control and Containment Plan (SPCP). The NRCS shall develop or verify the existence of a SPCP. The SPCP will include the following:

      i. A description of any regulated or hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
      ii. Notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

   d. Site Preparation. The NRCS shall:

      i. Flag boundaries of clearing limits associated with site access, riparian crossings, stream crossings, staging and stockpile areas to minimize overall disturbance and disturbance to critical vegetation.
      ii. Establish staging areas (used for construction equipment storage, vehicle storage, fueling, servicing, etc.) along existing roadways or turnouts at

least 300 feet away from Salmon Creek in a location and manner that will preclude erosion into or contamination of the stream or floodplain.

iii. Minimize clearing and grubbing activities and stockpile large wood, trees, riparian vegetation, other vegetation, sand, and topsoil removed for establishment of staging area for site restoration.

iv. Place sediment barriers around disturbed sites to prevent erosion and sedimentation associated with equipment and material storage sites, fueling operations, and staging areas from entering the stream directly, through natural drainage or road side ditches.

v. Monitor and maintain erosion controls until site restoration is complete.

vi. If monitoring or inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.

e. Heavy Equipment. The NRCS shall minimize fuel/oil leakage from construction equipment into the stream channel and floodplain through the following:

i. All equipment used adjacent to Salmon Creek will be steam cleaned and inspected for leaks before arriving at the project site. Fix any leaks, and remove external oil and grease, along with dirt and mud. Inspect all equipment before unloading at site. Thereafter, inspect equipment daily for leaks or accumulations of grease, and fix any identified problems before entering streams or areas that drain directly to streams or wetlands.

ii. Equipment used for instream or riparian work shall be fueled and serviced in an established staging area. When not in use, vehicles will be stored in the staging area.

iii. Two oil-absorbing, floating booms appropriate for the size of the stream shall be available on site during all phases of construction whenever surface water is present. Place booms in a location that facilitates an immediate response to potential petroleum leakage.

iv. Diaper all stationary power equipment (*e.g.*, generators or water pumps, cranes) operated within 150 feet of any stream, waterbody or wetland to prevent leaks, unless suitable containment is provided to prevent potential spills from entering any stream or waterbody.

f. Isolation of in-water work area. Bank locations targeted for the placement of the six rock/LWD barbs will be completely isolated from the flowing waters of Salmon creek by straw bale/visqueen dams, unless approved in writing by NOAA Fisheries.

g. Construction discharge water. Treat all water created by construction (*e.g.,* pumping for work area isolation) as follows.

i. Pump all turbid and/or contaminated waters generated during construction activities to an upland site lacking surface connection to Salmon Creek.

h. Earthmoving. The NRCS shall minimize sedimentation resulting from earthmoving construction activities through the following:

i. Minimize amounts of construction debris and soil falling into streams by installing appropriate erosion control barriers before construction. Such barriers should be maintained throughout the related construction and removed only when construction is complete. When possible, remove debris or large earth spills that have fallen into the channel.
ii. Delineate construction impact areas on project plans and confine work to the noted area. Confine construction impacts to the minimum area necessary to complete the project.
iii. Keep a supply of erosion control materials (*e.g.*, silt fence and straw bales) on hand to respond to sediment emergencies. Use sterile straw or weed free certified straw bales to prevent introduction of non-native weeds.
iv. Cease all project operations, except efforts to minimize storm or high flow erosion, under high flow conditions that result in inundation of the project area.
v. Stockpile native streambed materials above the bankfull elevation for later use in project restoration. To prevent contamination from fine soils, these materials shall be kept separate from other stockpiled material, which is not native to the streambed.

i. Site Restoration. The NRCS shall minimize sedimentation through site restoration by including the following:

i. Upon project completion, remove project-related waste. Initiate rehabilitation of all disturbed areas in a manner that results in similar or better than pre-work conditions through spreading of stockpiled materials, seeding, and/or planting with native seed mixes or plants. If native stock is not available, use soil-stabilizing vegetation (seed or plants) that does not lead to propagation of non-native species.
ii. Develop a restoration work plan with sufficient detail to include a description of the following elements, as applicable:
(1) A plan to control non-native invasive vegetation.
(2) Site management and maintenance requirements.
iii. No herbicide application will occur as part of the permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
iv. When necessary, loosen compacted access roads, stream crossings, stream channel within the de-watered work area, staging, and stockpile areas.
v. Instream or floodplain restoration materials such as large wood and boulders shall mimic as much as possible those found in the project vicinity. Such materials may be salvaged from the project site or hauled in from offsite but cannot be taken from streams, wetlands, or other sensitive areas.

vi. Complete necessary site restoration activities within five days of the last construction phase. Replant each area requiring vegetation before the first May 15th following construction.
vii. Irrigate all revegetated sites for a minimum of three years.

2. To implement Reasonable and Prudent Measure No 2, the NRCS shall:

a. Monitoring. Within 120 days of completing the project, the NRCS will submit a monitoring report to NOAA Fisheries describing the NRCS' success meeting these terms and conditions. This report will consist of:

i. Project identification.
1. Project name;
2. Starting and ending dates of work completed for the project; and
3. Name and address of the construction supervisor.
ii. Photographic documentation of environmental conditions at the project site before, during, and after project completion.
1. Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post condition.
2. Each photograph will be labeled with the date, time, photo print, project name, the name of the photographer, and a comment describing the photograph's subject.
iii. Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

b. Salvage notice. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the National Marine Fishery Service Law Enforcement Office, at the Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; telephone: 360/418-4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

c. Monitoring reports will be submitted to:

NOAA Fisheries - Washington State Habitat Office
Attn: 2004/00694
510 Desmond Dr, SE, Suite 103
Lacey, Washington 98503

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

The consultation requirements of section 305(b) MSA directs Federal agencies to consult with NOAA Fisheries on all actions, or proposed actions, that may adversely affect EFH. Adverse effects include the direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside EFH, and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) also requires NOAA Fisheries to recommend measures that may be taken by the action agency to conserve EFH.

The Pacific Fishery Management Council designated EFH for groundfish (PFMC 1998a), coastal pelagic species (PFMC 1998b), and chinook salmon, coho salmon, and Puget Sound pink salmon (PFMC 1999). The proposed action and action area for this consultation are described in the Introduction to this document. The action area includes areas designated as EFH for various life-history stages of chinook and coho salmon (PFMC 1999). The effects of the proposed action on EFH for coho and chinook are identical to the effects described for UCR steelhead in the ESA section of this document.

Essential Fish Habitat Conservation Recommendations

NOAA Fisheries believes that the conservation measures proposed by the NRCS (see Proposed Action section) and reasonable and prudent measures and terms and conditions listed in the ESA portion of this Opinion are applicable to and protective of salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

Statutory Response Requirement

Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations [50 CFR 600.920(j)(1)]. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse affects that the activity has on EFH. If the response is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

Supplemental Consultation

The NRCS must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations [50 CFR 600.920(k)].

DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

Section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-554) ("Data Quality Act" [DQA]) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the Biological Opinion addresses these DQA components, documents compliance with the Data Quality Act, and certifies that this Biological Opinion has undergone pre-dissemination review.

Utility: This document records the results of two interagency consultations, completed under two separate legal authorities. The information presented in this document is useful to two agencies of the Federal government (NOAA Fisheries and Natural Resources Conservation Service), the residents of Okanagon County, Washington, and the general public. These consultations help fulfill multiple legal obligations of the named agencies. The information is also useful and of interest to the general public as it describes the manner in which public trust resources are being managed and conserved. The information is beneficial to citizens in Okanagon County because the underlying project affects natural resources and property protection at a site within that county. The information presented in these documents and used in the underlying consultations represents the best available scientific and commercial information and has been improved through interaction with the consulting agency.

Integrity: This consultation was completed on a computer system managed by NOAA Fisheries in accordance with relevant information technology security policies and standards set out in Appendix III, "Security of Automated Information Resources," Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

Objectivity:
Information Product Category: Natural Resource Plan.

Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NOAA Fisheries ESA Consultation Handbook, ESA Regulations, 50 CFR 402.01 et seq., and the Magnuson-Stevens Fishery Conservation and Management Act (MSA) implementing regulations regarding Essential Fish Habitat, 50 CFR 600.920(j).

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the literature cited section. The analyses in this biological opinion/EFH consultation contain more background on information sources and quality.
Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NOAA Fisheries staff with training in ESA and MSA implementation, and reviewed in accordance with Northwest Region ESA quality control and assurance processes.

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